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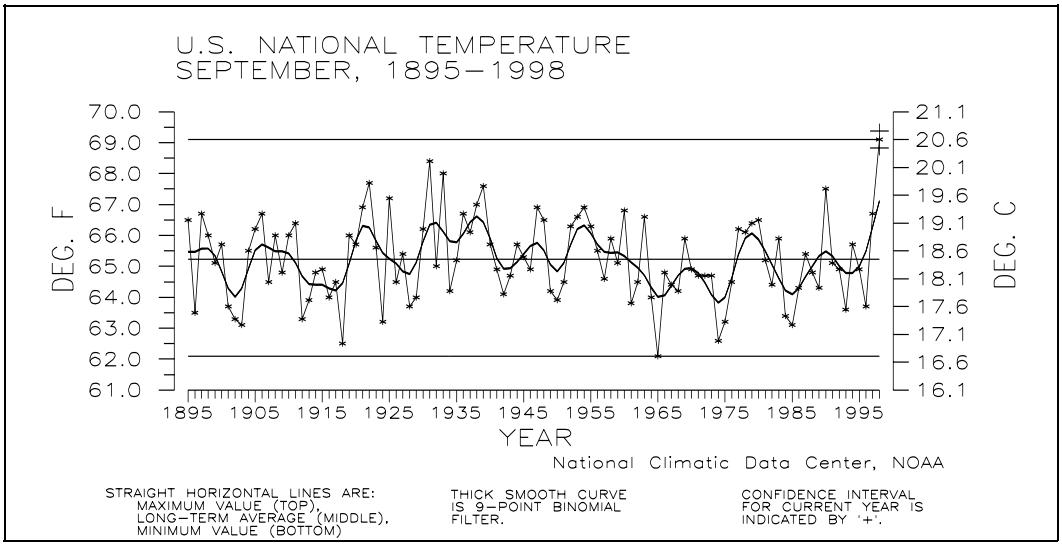
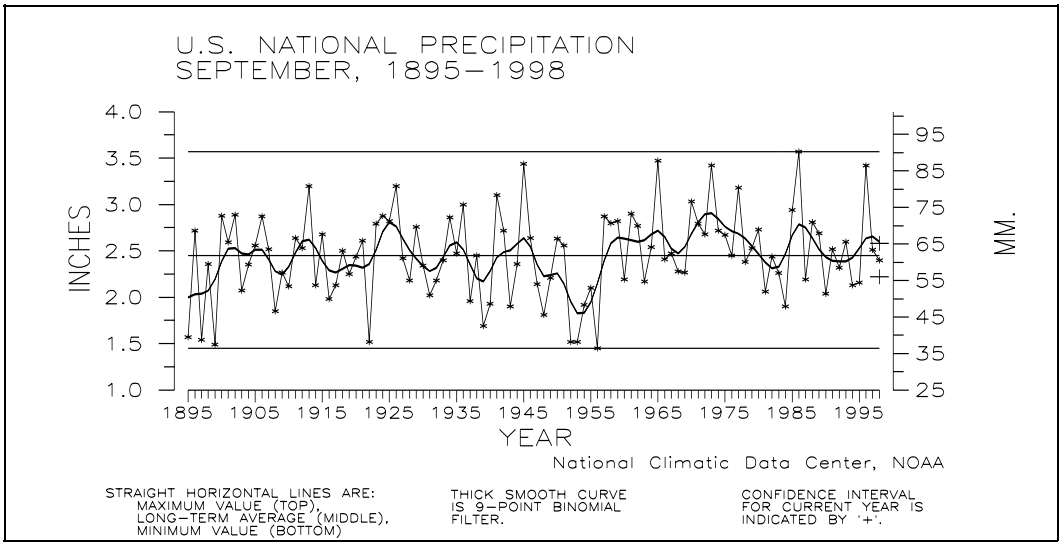
Volume 10 Number 9

CLIMATE VARIATIONS BULLETIN





noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE / NATIONAL CLIMATIC DATA CENTER ASHEVILLE, N.C.

This CLIMATE VARIATIONS BULLETIN (CVB) is a preliminary report that puts current monthly climate anomalies into historical perspective using climate databases archived at the National Climatic Data Center (NCDC). It is issued on a monthly basis. Supplemental sections are included which address seasonal and annual perspectives, when appropriate.

Current data are based on preliminary reports from River Forecast Center stations and First and Second Order airport stations obtained from the National Weather Service (NWS) Climate Prediction Center. THE CURRENT DATA SHOULD BE USED WITH CAUTION. These preliminary data are useful for estimating how current anomalies compare to the historical record, however the actual values and rankings for the current year will change as the final data arrive at NCDC and are processed.

The following NCDC datasets are used for the historical data: the climate division drought database (TD-9640), and the hurricane datasets (TD-9636 and TD-9697). It should be noted that the climate division drought database consists of monthly data for 344 climate divisions in the contiguous United States. These divisional values are calculated from the 6000+ station Cooperative Observer network.

If you are a climate researcher and would like to order copies of the historical datasets used to make graphs of the type in this report, call 828-271-4994 or fax a letter to 828-271-4876 or mail a letter to the address given below, ATTN: Research User Services.

All other questions or requests for data should be made by calling 828-271-4800 or sending a fax to 828-271-4876 or by writing to:

National Climatic Data Center, NOAA
Federal Building
151 Patton Avenue, Room 120
Asheville, NC 28801-5001

If you use any of the information from this CVB, please identify "National Climatic Data Center, NOAA" as the source.

UNITED STATES SEPTEMBER CLIMATE IN HISTORICAL PERSPECTIVE

William O. Brown
National Climatic Data Center, NOAA
Global Climate Lab
Federal Building
Asheville, NC 28801 USA

TABLE 1. PRECIPITATION AND TEMPERATURE RANKS, BASED ON THE PERIOD 1895-1998. 1 = DRIEST/COLDEST, 104 = WETTEST/WARMEST FOR SEPTEMBER 1998, 104 = WETTEST/WARMEST FOR AUG-SEP 1998, 104 = WETTEST/WARMEST FOR APR-SEP 1998, 103 = WETTEST/WARMEST FOR OCT 1997-SEP 1998.

REGION	SEP 1998	AUG-SEP 1998	APR-SEP 1998	OCT 1997-SEP 1998
PRECIPITATION:				
NORTHEAST	19	7	69	86
EAST NORTH CENTRAL	18	38	49	61
CENTRAL	23	13	96	86
SOUTHEAST	90	68	42	103
WEST NORTH CENTRAL	20	37	66	72
SOUTH	76	78	7	60
SOUTHWEST	40	23	37	68
NORTHWEST	40	19	88	75
WEST	90	87	104	102
NATIONAL	45	33	47	98
TEMPERATURE:				
NORTHEAST	89	93	100	100
EAST NORTH CENTRAL	101	102	100	101
CENTRAL	98	95	93	98
SOUTHEAST	84	85	101	74
WEST NORTH CENTRAL	104	104	98	98
SOUTH	102	102	104	93
SOUTHWEST	97	99	68	73
NORTHWEST	100	103	97	98
WEST	75	103	27	54
NATIONAL	104	104	102	102

TABLE 2. EXTREMES, 1961-90 NORMALS, AND 1998 VALUES FOR SEPTEMBER. IT SHOULD BE NOTED THAT THE 1998 VALUES WILL CHANGE WHEN THE FINAL DATA ARE PROCESSED.

PRECIPITATION (INCHES)

REGION	DRIEST VALUE	DRIEST YEAR	WETTEST VALUE	WETTEST YEAR	NORMAL PCPN	1998 PCPN
NORTHEAST	1.25	1914	6.68	1938	3.63	2.46
EAST NORTH CENTRAL	.95	1952	7.21	1986	3.60	2.15
CENTRAL	.70	1897	6.94	1926	3.63	2.51
SOUTHEAST	1.91	1919	9.26	1979	4.33	6.08
WEST NORTH CENTRAL	.47	1952	3.42	1973	1.61	.88
SOUTH	.88	1956	6.88	1913	3.67	4.04
SOUTHWEST	.09	1956	3.07	1941	1.46	1.06
NORTHWEST	.12	1975	3.42	1959	1.33	1.00
WEST	.03	1974	2.00	1976	.62	1.04
NATIONAL	1.45	1956	3.57	1986	2.63	2.40*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - .18 INCHES

TEMPERATURE (DEGREES F)

REGION	COLDEST VALUE	COLDEST YEAR	WARMEST VALUE	WARMEST YEAR	NORMAL TEMP	1998 TEMP
NORTHEAST	56.2	1918	66.5	1961	59.8	62.3
EAST NORTH CENTRAL	53.5	1918	65.6	1931	58.8	64.1
CENTRAL	60.5	1918	73.6	1925	66.7	71.4
SOUTHEAST	68.9	1967	80.3	1925	73.2	75.5
WEST NORTH CENTRAL	47.4	1965	63.7	1998	56.8	63.7
SOUTH	67.7	1974	79.5	1911	73.6	79.0
SOUTHWEST	59.0	1912	67.3	1983	63.9	66.9
NORTHWEST	52.7	1926	62.7	1990	57.3	61.8
WEST	61.0	1986	69.9	1979	65.9	67.8
NATIONAL	62.1	1965	69.1	1998	64.8	69.1*

* PRELIMINARY VALUE, CONFIDENCE INTERVAL + OR - .3 DEG. F.

TABLE 3.

STATISTICS FOR SELECTED RIVER BASINS: PRECIPITATION RANKING FOR OCT-SEP 1997-98, WHERE RANK OF 1 = DRIEST, 103 = WETTEST, BASED ON THE PERIOD 1895 TO 1998, AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) DROUGHT, AND AREAL PERCENT OF THE BASIN EXPERIENCING SEVERE OR EXTREME LONG-TERM (PALMER) WET CONDITIONS, AS OF SEPTEMBER 1998. RIVER BASIN REGIONS AS DEFINED BY THE U.S. WATER RESOURCES COUNCIL.

RIVER BASIN	PRECIPITATION RANK	% AREA DRY	% AREA WET
MISSOURI BASIN	82	4.6%	22.9%
PACIFIC NORTHWEST BASIN	76	2.2%	32.6%
CALIFORNIA RIVER BASIN	102	.0%	100.0%
GREAT BASIN	100	.0%	87.0%
UPPER COLORADO BASIN	41	.0%	.0%
LOWER COLORADO BASIN	71	.0%	37.7%
RIO GRANDE BASIN	35	29.5%	4.9%
ARKANSAS-WHITE-RED BASIN	56	31.8%	12.6%
TEXAS GULF COAST BASIN	57	49.1%	.0%
SOURIS-RED-RAINY BASIN	64	.0%	8.5%
UPPER MISSISSIPPI BASIN	90	.0%	2.9%
LOWER MISSISSIPPI BASIN	67	9.0%	.0%
GREAT LAKES BASIN	37	34.6%	.0%
OHIO RIVER BASIN	70	.0%	2.3%
TENNESSEE RIVER BASIN	78	.0%	.0%
NEW ENGLAND BASIN	81	.0%	7.7%
MID-ATLANTIC BASIN	87	.0%	5.3%
SOUTH ATLANTIC-GULF BASIN	102	.0%	.0%

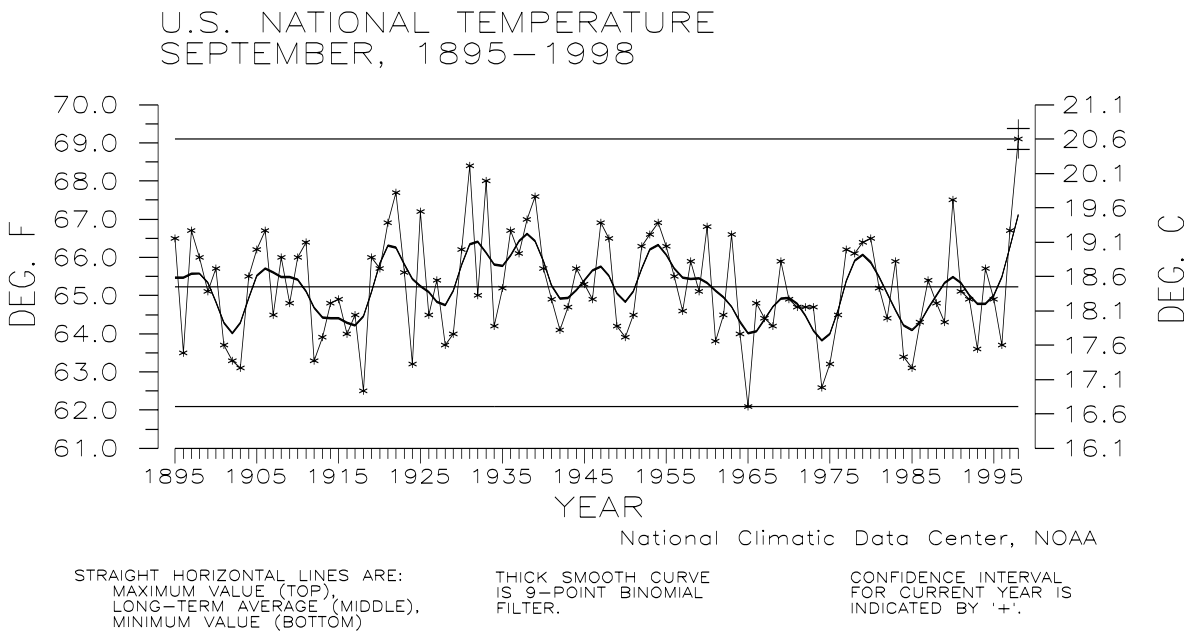


Figure 1: Preliminary data for September 1998 indicate that temperature averaged across the contiguous United States was much above the long-term mean ranking as the warmest September since 1895. Over sixty-six percent of the country was much warmer than normal while nearly zero percent of the country was much cooler than normal.

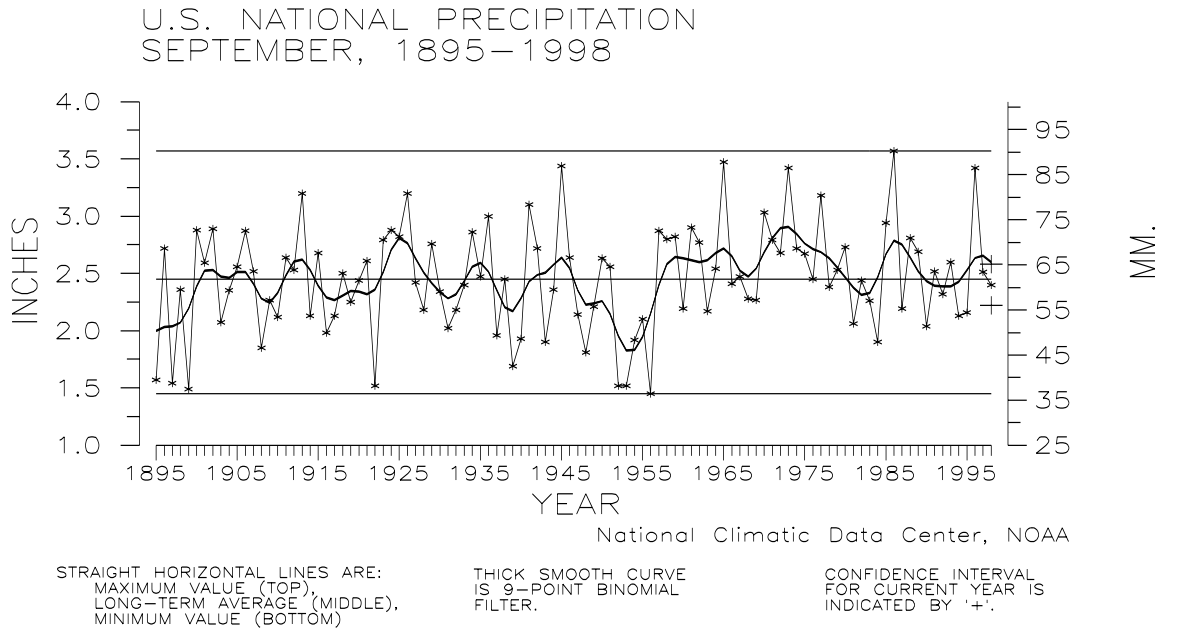


Figure 2: September 1998 was the 45th driest such month since 1895. Over 11% of the country experienced much drier than normal conditions while an additional 11% of the country was much wetter than normal.

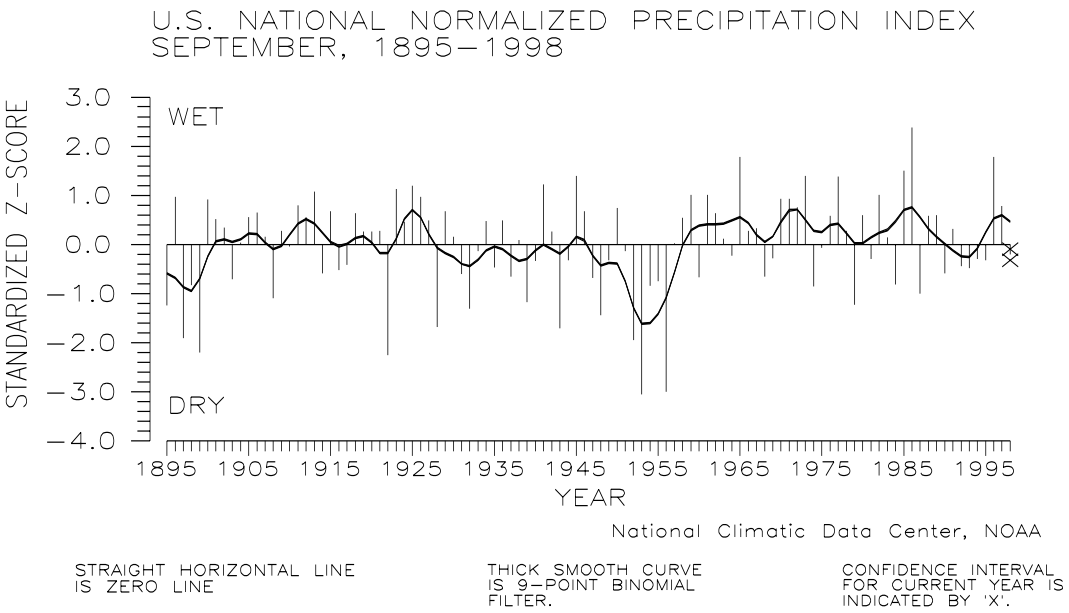


Figure 3: The preliminary national standardized precipitation index ranked September 1998 as the 42nd driest such month on record. This standardized z-score is estimated to be accurate to within 0.114 index units and its confidence interval is shown as an 'X'.

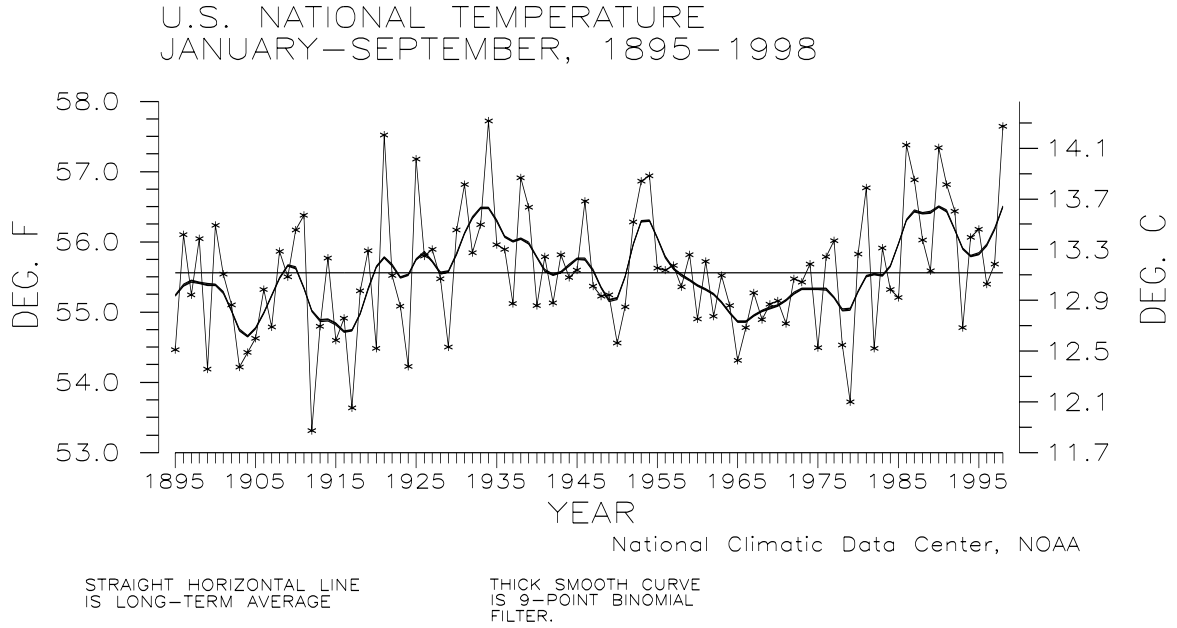


Figure 4: Based upon preliminary data, January-September 1998 was the second warmest such period on record. Nearly 68% percent of the country had much warmer than normal January-September temperatures while nearly zero percent of the country was much cooler than normal. Eleven of the last thirteen such nine-month periods have been above- to much-above the long-term mean.

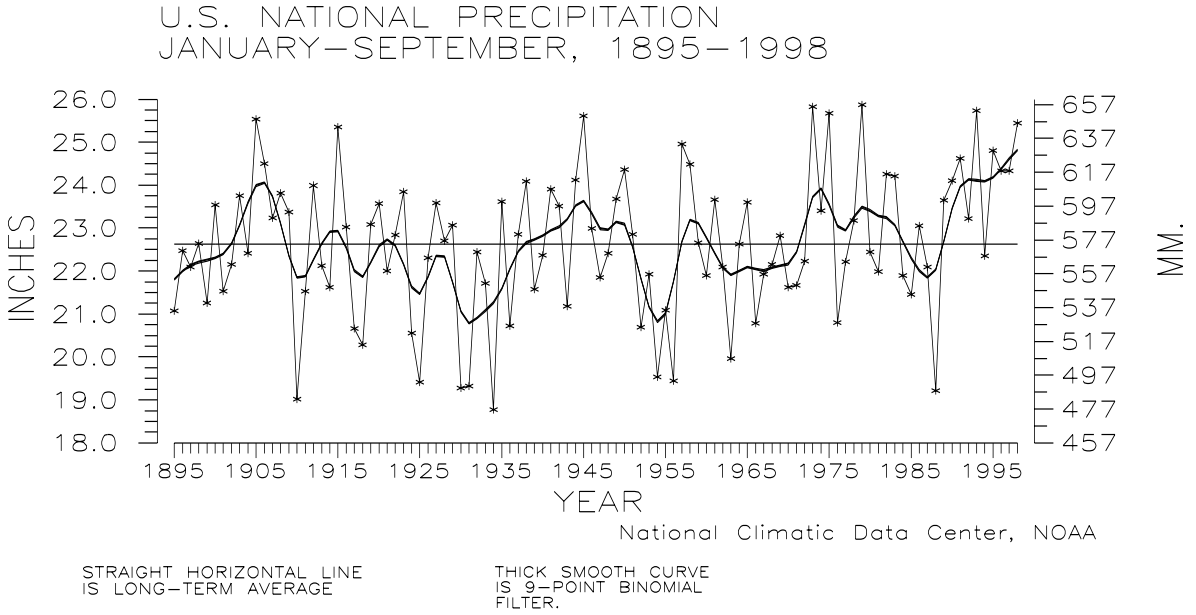


Figure 5: Preliminary precipitation data indicate that the year-to-date, January-September 1998, was the seventh wettest such nine-month period since records began. About 26% of the country was much wetter than normal while about one percent of the country was much drier than normal. Nine of the previous ten such nine-month periods have had precipitation above- to much-above the long-term mean.

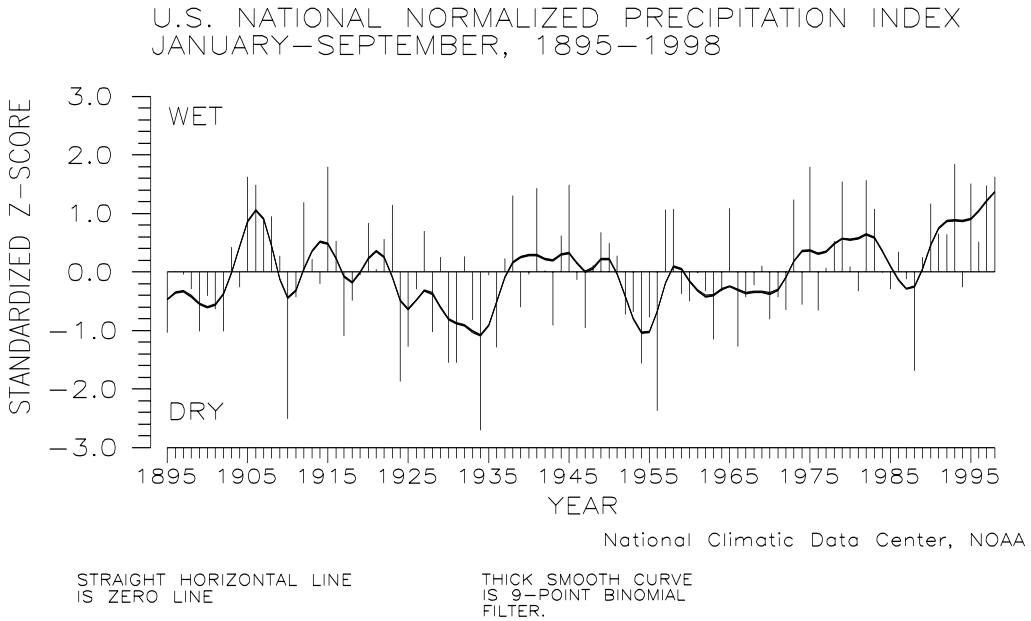


Figure 6: The preliminary national year-to-date standardized precipitation index ranked January-September 1998 as the fourth wettest such period since 1895.

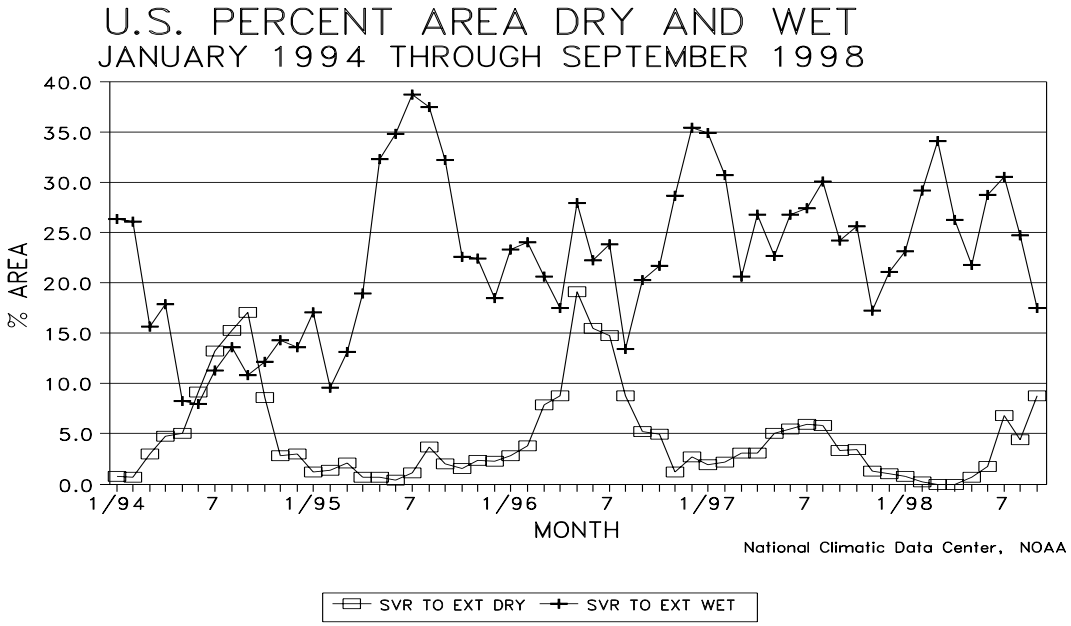


Figure 7: Long-term drought coverage (as measured by the Palmer Drought Index) showed a significant jump over August, with September 1998 having nearly nine percent of the country in severe to extreme drought. The percent area of the country experiencing severe to extreme wetness dropped to near 18%. The core dry areas included upper-Michigan, northern Texas, southwestern Oklahoma, and northeastern Montana while core wet areas included California, the Great Basin, portions of the Southwest and Northwest, and portions of the central Rockies and northern Plains.

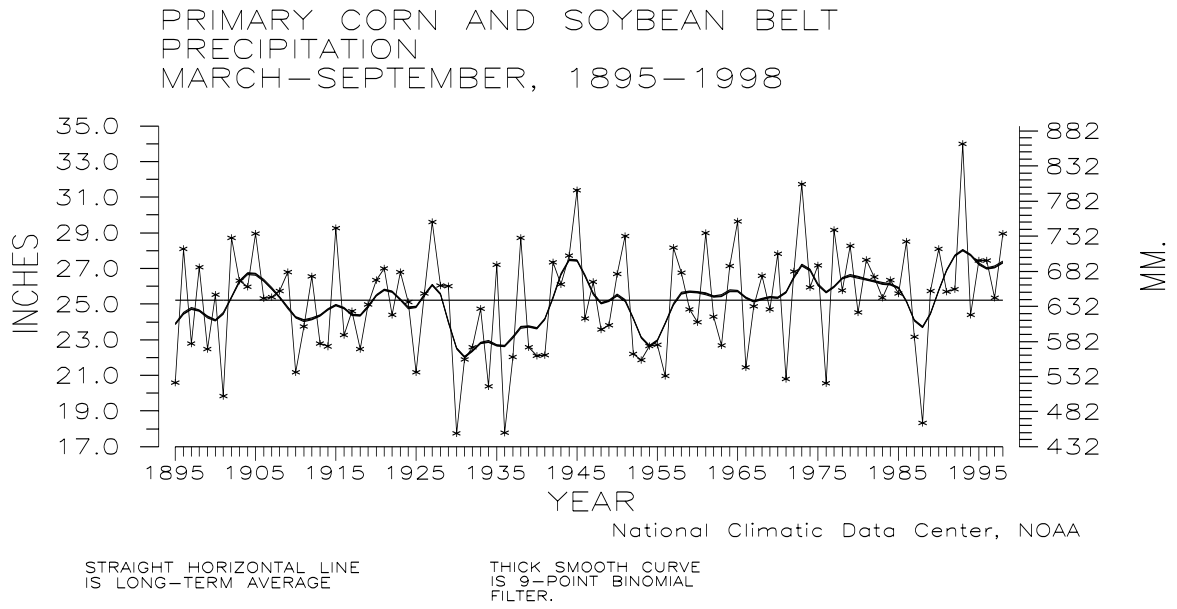


Figure 8: Preliminary data indicate that precipitation averaged across the Primary Corn and Soybean agricultural belt was above the long-term mean for the growing-season-to-date.

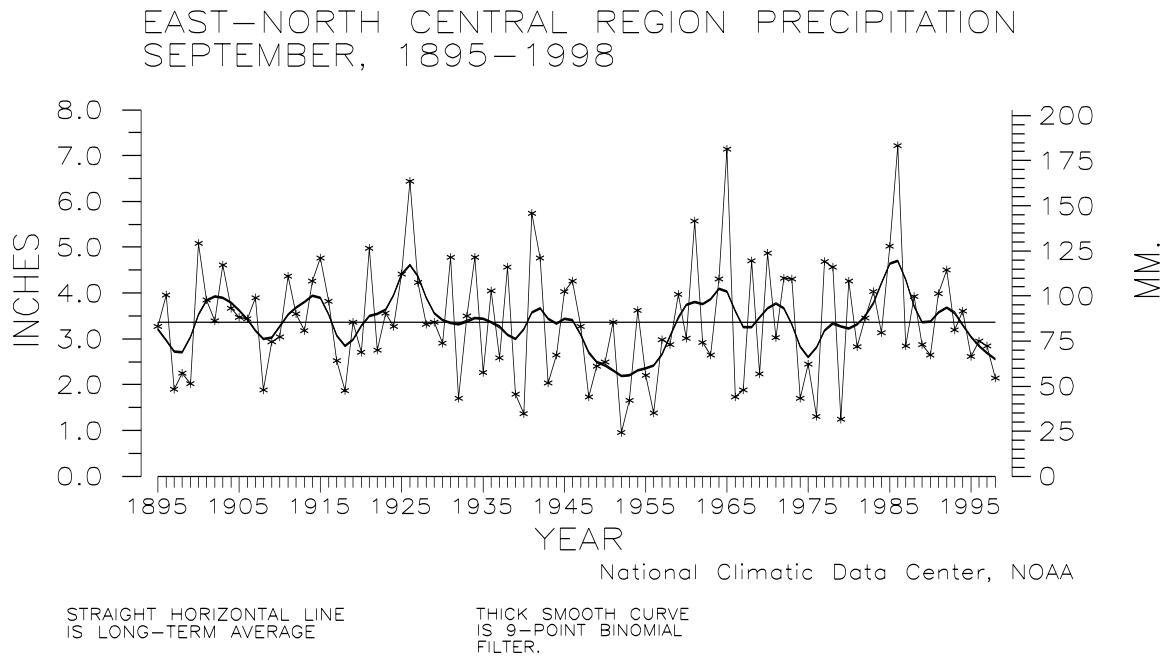


Figure 9: Preliminary data ranked September 1998 as the 18th driest such period on record for the East-North Central Region. The East-North Central Region includes Iowa, Michigan, Minnesota, and Wisconsin.

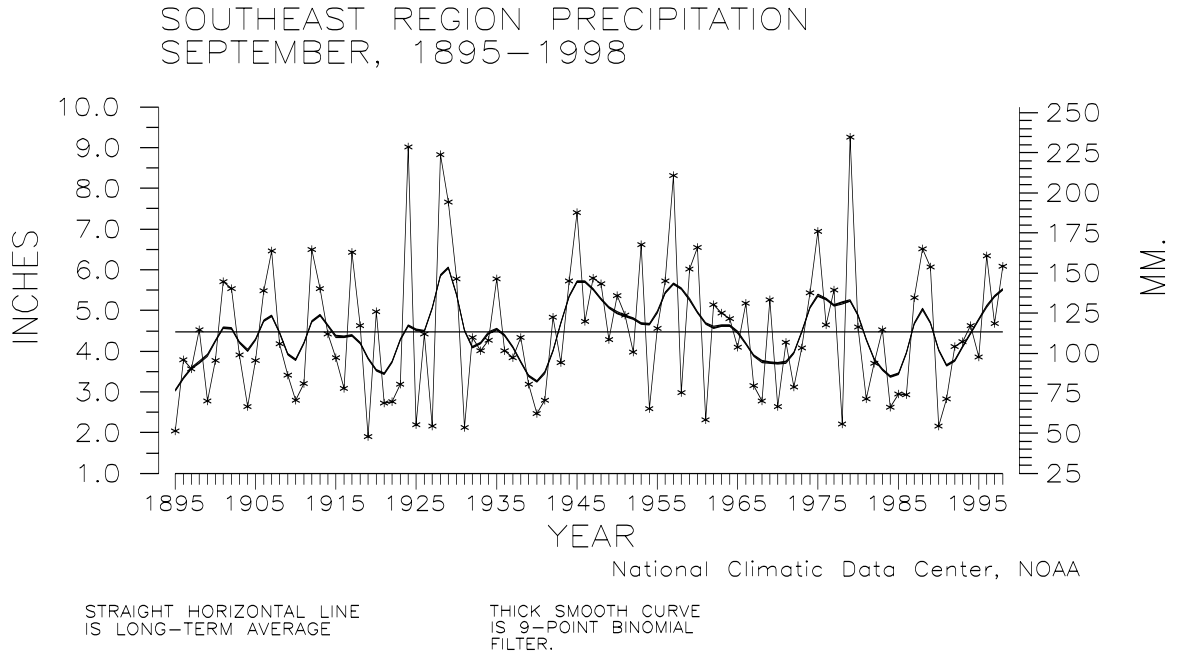


Figure 10: Preliminary data ranked September 1998 as the 15th wettest such month on record for the Southeast Region. The Southeast Region includes Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama.

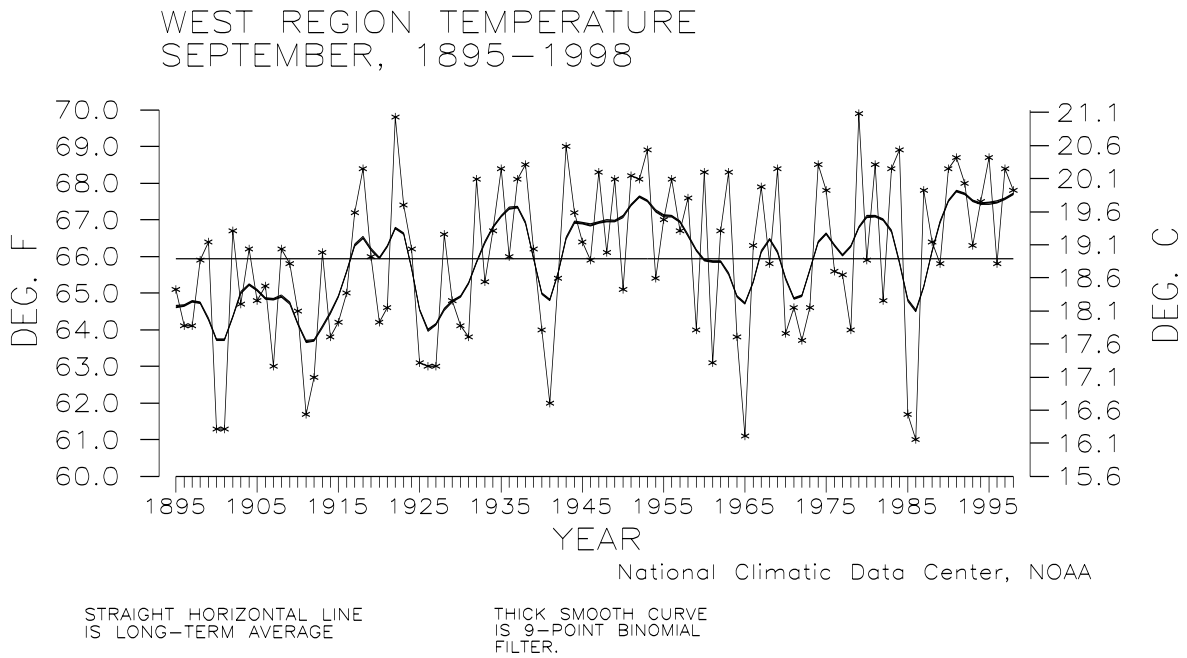


Figure 11: Preliminary data ranked September 1998 as the 30th warmest such period on record for the West Region. The West Region includes California and Nevada.

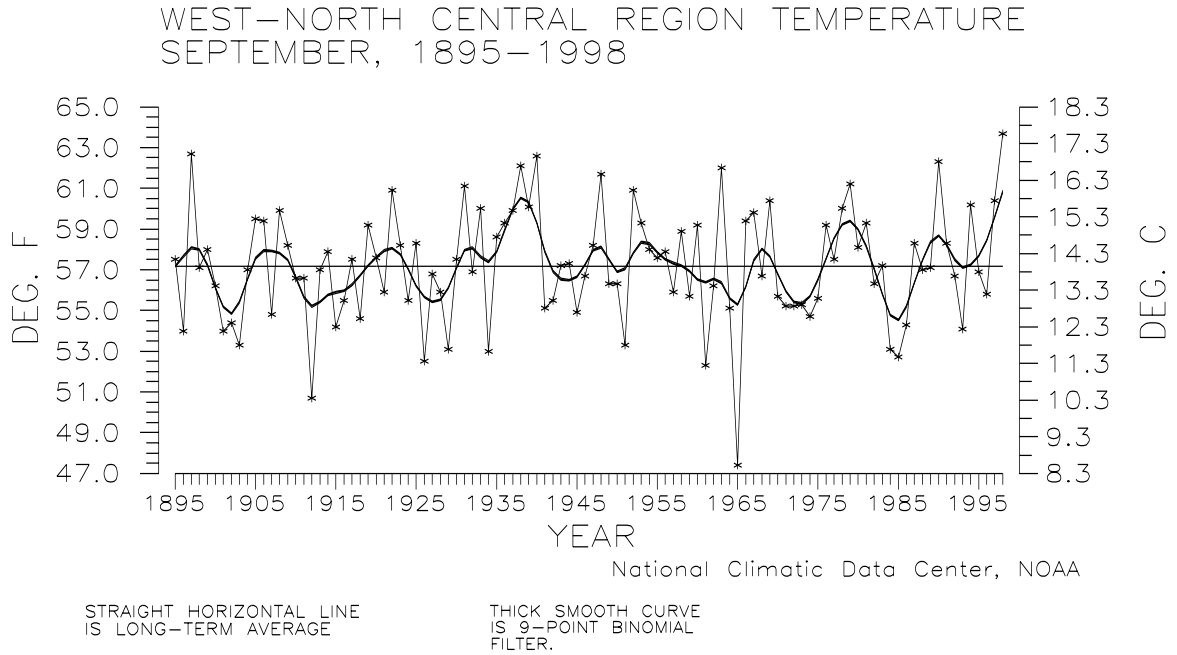


Figure 12: Preliminary data ranked September 1998 as the warmest such month on record for the West-North Central Region. The West-North Central Region includes Montana, Nebraska, North Dakota, South Dakota, and Wyoming.

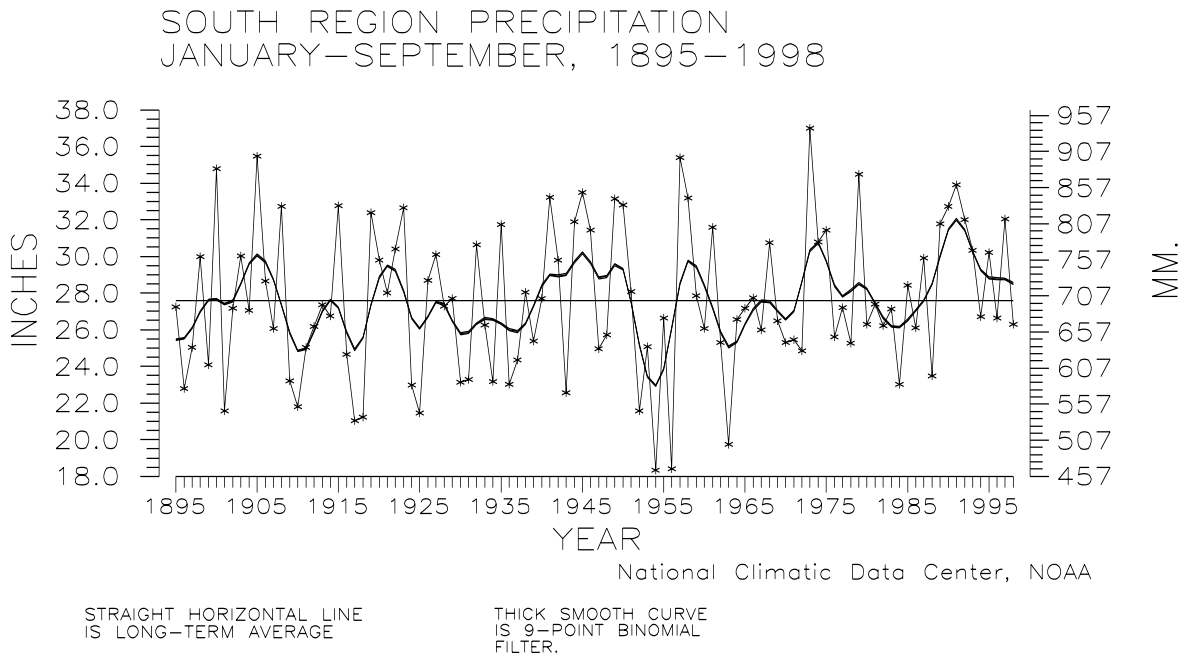


Figure 13: Preliminary data ranked January-September 1998 as the 43rd driest such period on record for the South Region. The South Region includes Arkansas, Kansas, Louisiana, Mississippi, Oklahoma, and Texas.

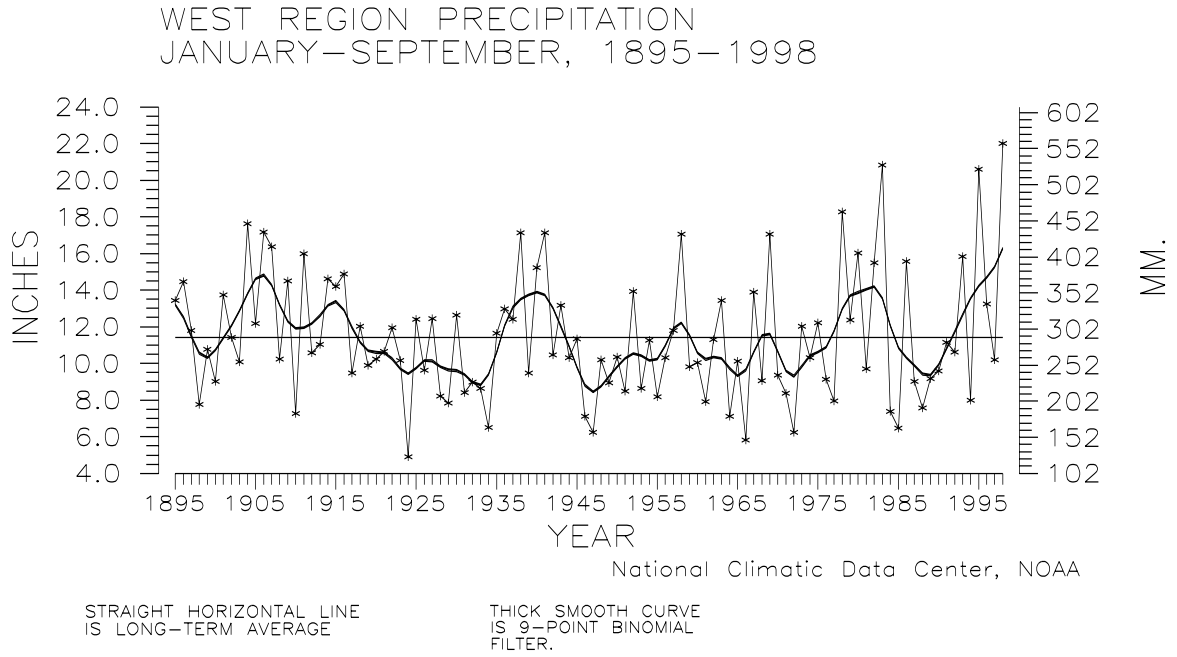


Figure 14: Preliminary data ranked January-September 1998 as the wettest such year-to-date on record for the West Region. Two of the last four such nine-month periods have been much wetter than normal.

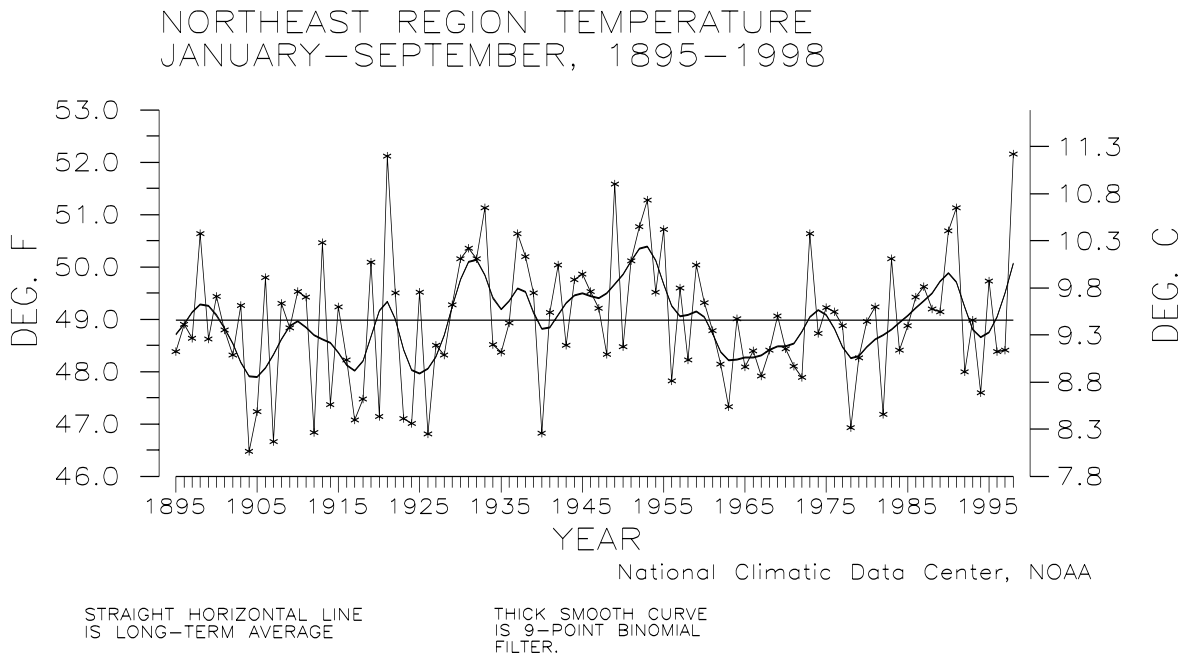


Figure 15: Preliminary data ranked January-September 1998 as the warmest such period on record for the Northeast Region. The Northeast Region includes each state from Maryland and Pennsylvania, northeastward.

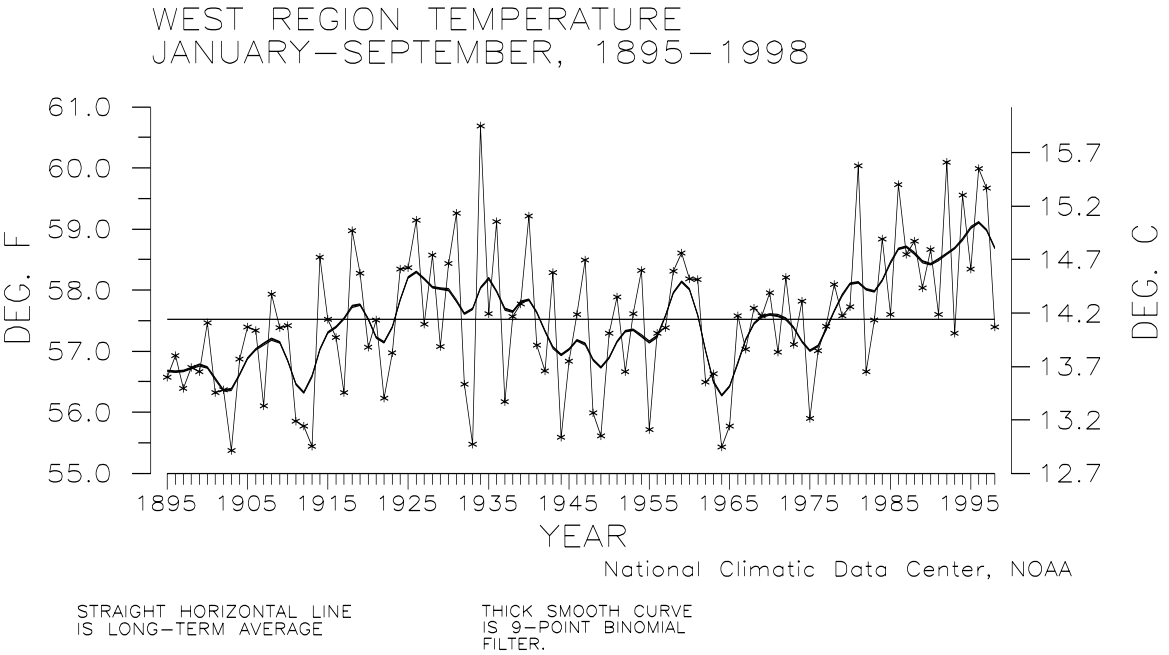


Figure 16: Preliminary data ranked January-September 1998 as the 47th coolest such year-to-date on record for the West Region. Only three of the last 21 such nine-month periods have been below the long-term mean.

SEPTEMBER 1998 STATEWIDE RANKS

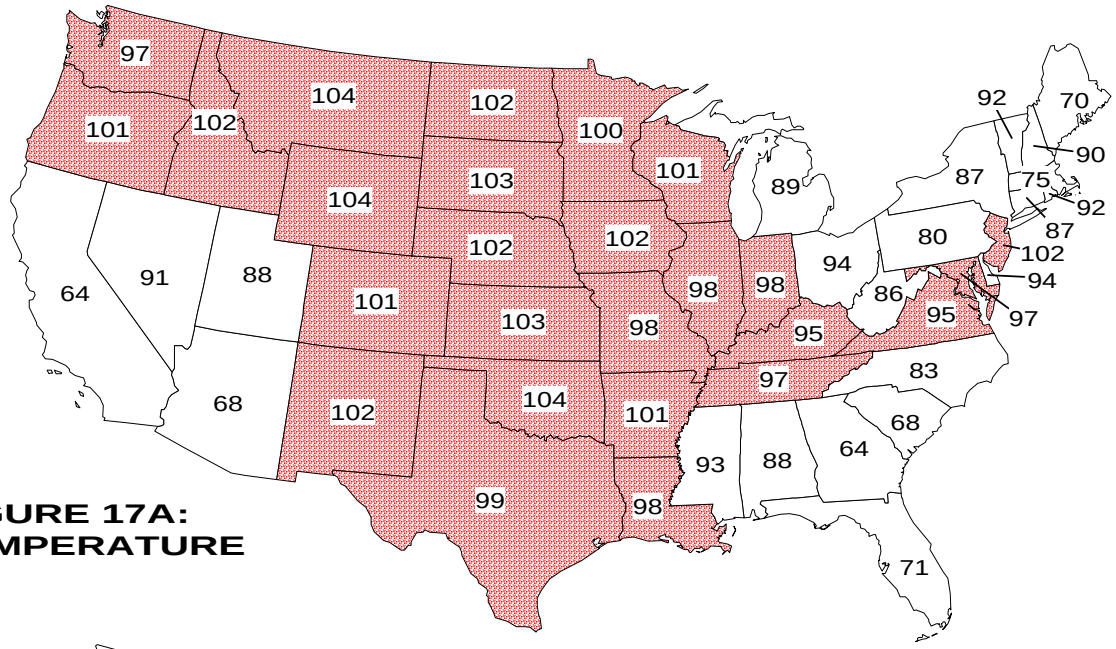


FIGURE 17A: TEMPERATURE

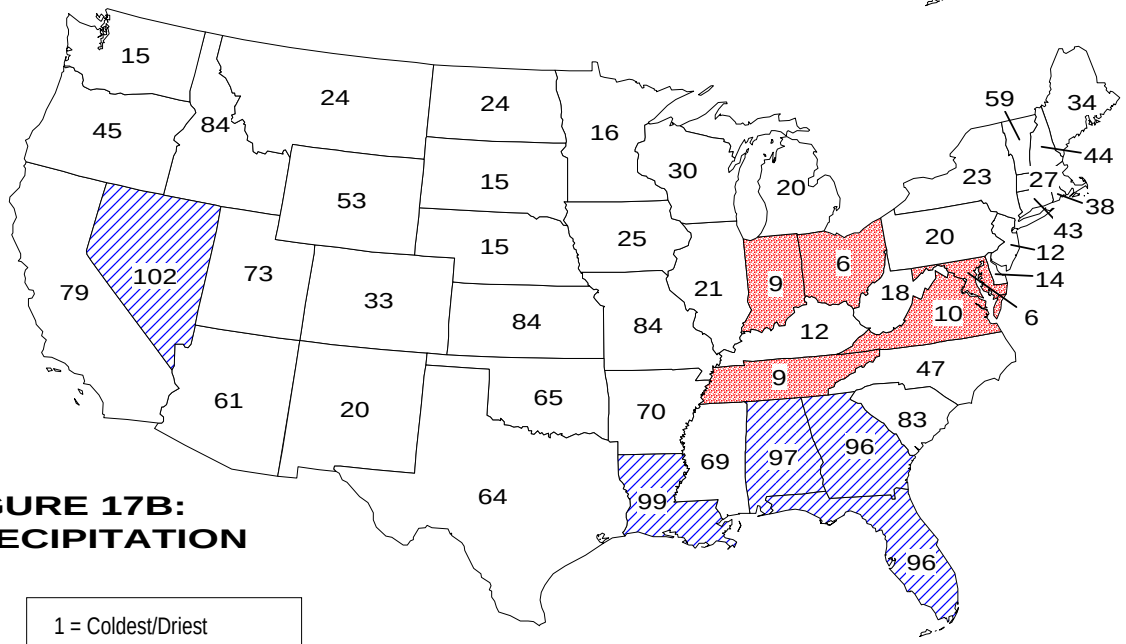


FIGURE 17B: PRECIPITATION

1 = Coldest/Driest
104 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1998. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 95-104) are shaded.

JAN-SEP 1998 STATEWIDE RANKS

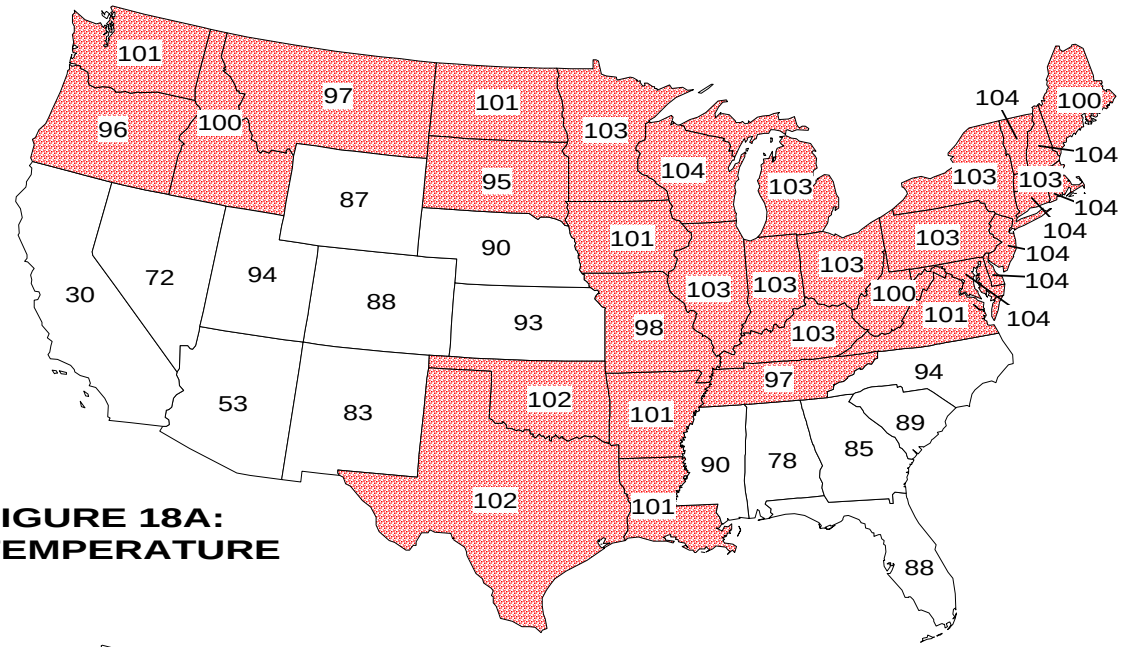


FIGURE 18A: TEMPERATURE

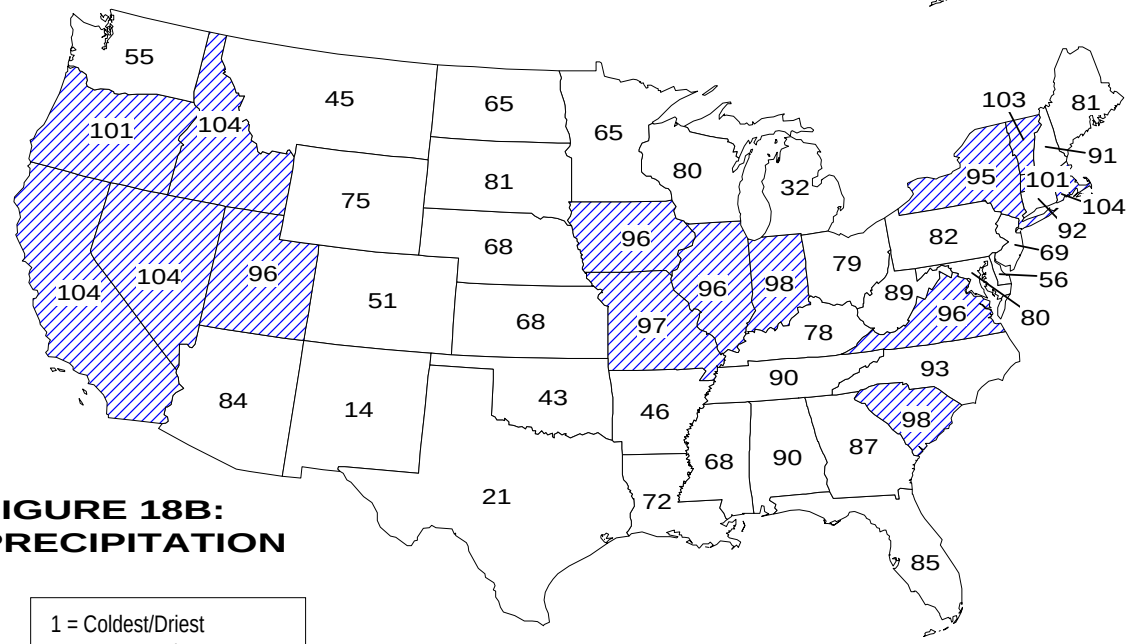


FIGURE 18B: PRECIPITATION

1 = Coldest/Driest
104 = Warmest/Wettest

National Climatic Data Center, NOAA

Temperature and Precipitation Ranks for the contiguous United States. Each state is ranked based on its data from 1895-1998. States having a rank of top ten coldest or driest (rank 1-10) or top ten warmest or wettest (rank 95-104) are shaded.

Figure 17A shows, in illustrative map form, the September 1998 temperature rankings for the 48 contiguous states. Twenty-six states were within the top ten warm portion of the historical distribution including the warmest September on record for Montana, Oklahoma, and Wyoming. Eighteen additional states ranked within the warm third of the historical distribution. No states ranked within the cool third of the distribution.

September 1998 state ranks for precipitation are shown in **Figure 17B**. Five states ranked within the top ten wet portion of the distribution while seven others ranked within the wet third portion of the distribution. Five states also ranked within the top ten dry portion of the historical distribution while twenty others ranked within the dry third. ***It should be noted that these September state precipitation ranks are preliminary and should be used with considerable caution due to the high variability of precipitation on a small space and time scale.***

Year-to-date statewide temperature and precipitation ranks are shown in **Figures 18A and 18B**. Thirty-three states ranked within the top ten warm portion of the historical distribution including the warmest such nine-month period on record for Connecticut, Delaware, Maryland, New Hampshire, New Jersey, Rhode Island, Vermont, and Wisconsin. Thirteen other states ranked within the warm third of the distribution. No state was within the top ten cool and only one (CA) ranked within the cool third of the distribution. Fifteen states had their tenth wettest or wetter January-September period including the wettest such period on record for California, Idaho, Nevada, and Rhode Island. Eighteen others ranked within the wet third portion of the distribution. Only three states (MI, NM, TX) ranked within the dry-third portion of the distribution for the nine-month period.

> ***It should be emphasized that all of the temperature and precipitation ranks on these maps and in Table 1 are based on preliminary data. The ranks will change when the final data are processed***.